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Navy Case No. 96,127  
Appl. No. 10/828,509  
Amended Appeal Brief



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No. : 10/828,509 CONFIRMATION NO. ED 914731441 US  
Applicant : Felipe Garcia, et al.  
Filed : April 12, 2004  
TC/AU. : 3641  
10 Examiner : Stephen M. Johnson

Docket No. : 96,127  
Customer No. : 000044893

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Commissioner for Patents  
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**AMENDED APPEAL BRIEF**

Sir:

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This amended appeal brief is submitted in response to a Notification of Non-Compliance with the Requirements of 37 CFR 41.37(c), dated 11/14/2006. This brief relates to an appeal noticed on June 23, 2006, seeking review of the Examiner's decision finally rejecting claims 1, 2, 8-10, 13, and 16-18 in the present application, as set forth in the Final Office Action dated January 4, 2006.

(i) REAL PARTY IN INTEREST

The party in interest in the above entitled application is the United States of America represented by the Secretary of the Navy as assignee of the entire interest in the subject invention of the above named inventors.

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(ii) RELATED APPEALS AND INTERFERENCES

There are no prior appeals or interferences related to this appeal.

(iii) STATUS OF CLAIMS

10 Claims 1, 2, 8-10, 13, and 16-18 are presently pending and on appeal. Claims 1, 2, 8-10, 13, and 16-18 stand finally rejected under 35 U.S.C. 102(b). Claims 9 and 16 also stand finally rejected under 35 U.S.C. 103(a). Claims 3-7, 11, 12, 14 and 15 have been withdrawn from consideration as reading on non-elected species.

15 (iv) STATUS OF AMENDMENTS

Following the Final Office Action, an amendment was filed on March 7, 2006, providing replacement drawing sheets as required by the Final Office Action, and requesting reconsideration of the rejections of claims 1, 2, 8-10, 13 and 16-18 under 35 U.S.C. 102(b) and 103(a). According to an Advisory Action dated March 24, 2006 the

replacement drawing sheets were approved and the proposed amendment was entered ,  
leaving claims 1, 2, 8-10, 13, and 16-18 for consideration on appeal.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

5 A concise explanation of the subject matter defined in independent claim 1 on  
appeal follows:

In accordance with the subject invention as claimed, a trajectory altering and blast  
energy absorption system is provided. The system (10) comprises a flexible and sealable  
plenum (12) with walls (12A and 12B) that become spaced apart when the plenum is  
10 inflated with a fluid (30) (page 4, lines 8-13). Dispersed in the plenum (12) are means  
(14 and 22) for altering the trajectory of a projectile that enters the inflated plenum. As  
illustrated in the specification, and as further defined in claim 2, the means for altering  
the trajectory of a projectile comprises flexible lines (14) (page 4, lines 24-31) and  
ballistic armor fabric sheets (22) (page 5, lines 28-32).

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A concise explanation of the subject matter defined in independent claim 10 on  
appeal follows:

In accordance with the subject invention as claimed, a trajectory altering and blast  
energy absorption system is provided. The system (10) comprises a flexible and sealable  
20 plenum (12) with walls (12A and 12B) that become spaced apart when the plenum is

inflated with a fluid (30) (page 4, lines 8-13). Dispersed in the plenum (12) are a plurality of flexible members (14 and 22) for altering the trajectory of a projectile that enters the inflated plenum. These flexible members (14 and 22) are coupled to the plenum (12) and are placed in tension when the plenum is inflated with the fluid (30).

5 As illustrated in the specification, and as further defined in claim 13, the flexible members comprise fibers (14) (page 4, line 31 – page 5, line 11) and ballistic armor fabric sheets (page 5, line 28 – page 6, line 9).

(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

10 Presented for review in this appeal are the final rejections of claims 1, 2, 8-10, 13, and 16-18 under 35 U.S.C. 102(b) and 103(a), as follows:

(a) Claims 1-2, 8, 10, 13, and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Cushman (3,086,753).

(b) Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
15 Cushman in view of Shih (5,795,414).

(c) Claims 1-2, 8-10, 13, and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Cadwell (3,601,935).

(vii) ARGUMENT

**(a) The Cushman patent does not teach all of the limitations of claims 1-2, 8, 10, 13 and 17-18.**

5           According to the Final Office action, claims 1-2, 8, 10, 13 and 17-18 on appeal are finally rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,086,753 to Cushman, as stated on page 2 of the Final Office action.

10           According to MPEP 2131, in order for a prior art reference to anticipate a claim under 35 U.S.C. 102, each and every element set forth in the claim must be found in the reference. Cushman does not teach means for altering trajectory of a projectile dispersed in said plenum (claim 1, lines 6-7).

15           35 U.S.C. 112, sixth paragraph, provides that a claim limitation expressed in means-plus-function language "shall be construed to cover the corresponding structure described in the specification and equivalents thereof." The trajectory altering and blast energy absorption system of claim 1 includes means, dispersed in the plenum, for altering the trajectory of a projectile entering the plenum when the plenum is inflated. The specification describes these means as flexible members that are dispersed within the plenum and are placed in tension when the plenum is inflated (see, e.g., page 4, lines 24-28). These flexible members can be flexible lines 14 (page 4, lines 28-31, Figs. 1 and 2) and  
20           ballistic armor fabric sheets 22 (page 5, line 28 – page 6, line 1; Figs. 1 and 2).

Nothing in Cushman describes or suggests the use of flexible lines, fabric sheets, or equivalents thereof *inside* a plenum to alter the trajectory of a projectile entering the plenum. In the Final Office Action, the Examiner stated that Cushman “discloses an inflatable vehicle protection system comprising: a) at least one flexible and sealable plenum; see fig. 3.” It is not clear from the Examiner’s statement, nor upon inspection of Fig. 3, whether the Examiner believes the “plenum” consists of the entire structure depicted in Fig. 1 (i.e., the interior area within the annular rings of the tubes 2), or the individual inflatable annular tubes 2. If the Examiner is relying on the entire structure to serve as the “plenum,” then Cushman necessarily fails to anticipate claim 1 because the structure/shelter described by Cushman is not inflatable. Claim 1 of the instant application requires that the plenum be inflatable (claim 1, lines 4, 5 and 7). Only the annular rings 2 that make up the interior walls of Cushman’s structure are inflatable; the interior area of the shelter is not inflated. On the other hand, if the Examiner is relying on the annular tubes 2 to serve as the “plenum,” then Cushman likewise fails to anticipate claim 1 because he doesn’t teach the use of flexible lines, fabric sheets, or equivalents thereof, *inside* the plenum to alter the trajectory of a projectile entering the plenum

In the Final Office Action, the Examiner stated that Cushman teaches “a plurality of flexible lines” (“4, portion of 2 adjacent thereto”) and “fiber or fabric sheets” (“col. 2, lines 11-12”). Cushman describes and claims a structure comprised of a series of annular inflatable tubes 2 that, when inflated, serve the dual purposes of elevating heavy equipment (i.e., as a jack) and providing shelter to personnel servicing that equipment. The inflatable annular tubes 2 of Cushman are stacked on top of each other and secured together by an

adhesive layer 4. Despite the Examiner's assertion to the contrary, adhesive layer 4 and the portions of the tubes 2 adjacent thereto are in no way similar to the flexible lines 14 disclosed and claimed in the instant application. Even if the adhesive layer 4 and portions of the tubes 2 could be construed to be "a plurality of flexible lines," they are not "in" the plenum as required by claim 1 of the instant application (claim 1, line 6).

Lines 11-12 of column 2 of Cushman, relied upon by the Examiner, states that the annular tubes themselves "may be made of any air-impermeable material, such as coated fabrics or polyester film." As discussed above, the only "plenum" in Cushman that may read upon the plenum of claim 1 is the annular tube 2 of Cushman since claim 1 requires the plenum to be inflatable. Therefore, the "air-impermeable material, such as coated fabrics or polyester film" relied upon by the Examiner must be the "plenum" 2 itself and, therefore, cannot be the fabric sheets (or equivalents, i.e., the means for altering) *dispersed in* the plenum required by claim 1.

Cushman also fails to anticipate claim 10 of the instant application for the same reasons discussed above: Cushman does not teach the use of a plurality of flexible members *dispersed in* the plenum (claim 10, lines 6-7). Also, since Cushman fails to teach this essential limitation of claims 1 and 10, then he also fails to teach every limitation of dependent claims 2, 8, 13, and 17-18 since they incorporate all the limitations of claims 1 or 10, as indicated. Furthermore, even if the Examiner is correct in equating Cushman's "coated fabrics or polyester film" that make up the annular rings 2 with the fabric sheets dispersed in the plenum, Cushman does not teach or suggest that his "fabric sheets" should be ballistic armor (claim 2, line 7; page 5, line 28 – page 6, line 9). Nor does Cushman

teach flexible lines passing through the ballistic armor fabric sheets (claim 2, line 8; page 6, lines 13-14).

Therefore, the Examiner's rejection of claims 1, 2, 8, 10, 13 and 17-18 as being anticipated by Cushman is improper and should be reversed.

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**(b) The Cushman and Shih patents do not teach all of the limitations of claims 9 and 16.**

The above discussion of Cushman's failure to anticipate the instant application applies to claims 9 and 16 as well. Claims 9 and 16 include all of the limitations of independent claims 1 and 10, respectively, with the additional limitation of a polymeric sealing material coupled to the walls of the plenum. The Examiner cites Shih solely for the purpose of showing that the use of a polymeric sealant material coupled to the walls for sealing punctures was known in the prior art (Final Office Action, para. 6). However, the Examiner does not identify, nor does Shih disclose, any additional teachings in the prior art that would overcome the shortcomings in Cushman as discussed above.

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According to MPEP 2142, in order to establish a *prima facie* case of obviousness under 35 U.S.C. 103(a), "the prior art reference (or references when combined) must teach or suggest all the claim limitations." Since neither Cushman nor Shih disclose, either individually or in combination, all of the elements of claims 9 and 16, which include the



limitations of claims 1 and 10, respectively, the Examiner's rejection of claims 9 and 16 are improper and should be reversed.

5        **(c) The Cadwell patent does not teach all of the limitations of claims 1-2, 8-10, 13, and 16-18.**

According to the Final Office action, claims 1-2, 8, 10, 13 and 17-18 on appeal are finally rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,601,935 to Cadwell, as stated on page 3 of the Final Office action.

10        According to MPEP 2131, in order for a prior art reference to anticipate a claim under 35 U.S.C. 102, each and every element set forth in the claim must be found in the reference. Cadwell does not teach means for altering trajectory of a projectile dispersed in said plenum (claim 1, lines 6-7).

15        35 U.S.C. 112, sixth paragraph, provides that a claim limitation expressed in means-plus-function language "shall be construed to cover the corresponding structure described in the specification and equivalents thereof." The trajectory altering and blast energy absorption system of claim 1 includes means, dispersed in the plenum, for altering the trajectory of a projectile entering the plenum when the plenum is inflated. The specification describes these means as flexible members that are dispersed within the plenum and are placed in tension when the plenum is inflated (see, e.g., page 4, lines 24-28).  
20        These flexible members can be flexible lines 14 (page 4, lines 28-31, Figs. 1 and 2), and

they can also be ballistic armor fabric sheets 22 (page 5, line 28 – page 6, line 1; Figs. 1 and 2).

Nothing in Cadwell describes or suggests the use of flexible lines, fabric sheets, or equivalents thereof *inside* a plenum to alter the trajectory of a projectile entering the plenum.

5 In the Final Office Action, the Examiner relies on shielding layer 24d to teach the plenum of claim 1 of the instant invention (Cadwell, Fig. 6; column 7, lines 58-61). However, for purposes of this discussion, the Applicant will assume that the “plenum” identified by the Examiner is also embodied in “shielding layers” 24, 24a, 24b, 24c, and 24e illustrated in the other figures and identified throughout the specification, and which will hereafter be referred  
10 to as shielding layer 24. In fact, shielding layer 24 is not a plenum, but is comprised of two separate layers 26 and 28 which are identified as tubes that can be inflated (column 4, line 73 – column 5, line 7). The inflatable layers, or tubes, 26 and 28 are the only elements taught by Cadwell that can properly be interpreted to be inflatable plenums as required by claim 1 of the instant application.

15 On page 4 of the Final Office Action, the Examiner contends that the “plurality of flexible lines” is taught by Cadwell’s “glue or mastic material” 40 (column 6, lines 19-21) or “reinforcing means” 30 and 32 (column 5, lines 52-59). Glue or mastic material is not similar in any way to flexible lines as those elements are defined and illustrated in the instant application; therefore, the Applicant contends that the Examiner’s reliance upon this part of  
20 Cadwell’s disclosure is mistaken. Cadwell’s reinforcing means 30 and 32 are provided to

support and strengthen the interior of plenums 26 and 28, respectively. While Cadwell teaches that these reinforcing means can be glass fiber or steel mesh, this means is not equivalent to the flexible lines described and claimed in the instant application. In the instant application, flexible lines 14 are coupled to and span opposing walls 12A and 12B of plenum 12 (page 4, lines 28-31; Fig. 1). In other words, and as illustrated in Fig. 1, one end of each flexible line 14 is attached to wall 12A, the line spans across the interior of the plenum 12 to opposing wall 12B, where the other end is attached. By contrast, Cadwell's reinforcing means (30, 32) is placed in direct and full contact with the interior surface of the tube (26, 28) and girds around the entire interior circumference of the tube; i.e., it doesn't span across the tube in order to provide a means for altering the trajectory of a projectile that enters the tube as required by claim 1 of the instant application (claim 1, lines 6-7). Nor is Cadwell's reinforcing means *dispersed in* the plenum; it forms part of the interior wall of the tube (26, 28) itself.

The Examiner also contends that the "fiber or fabric sheets" are taught in column 5, lines 52-59 of Cadwell. This portion of Cadwell cited by the Examiner describes the same reinforcing means (30, 32) that the Examiner relies upon to teach the flexible lines as discussed above. This reinforcing means is not equivalent to the ballistic armor fabric sheets described and claimed in the instant application. In the instant application, the ballistic armor fabric sheets 22 are arranged within the plenum 12 "in a spaced-apart and substantially parallel fashion to form an angular relationship with lines 14" (page 5, lines 28-

32). Cadwell's reinforcing means (30, 32) is not arranged in a spaced-apart and parallel fashion, nor does it form an angle to any flexible lines. Each ballistic armor fabric sheet 22 of the instant application, like the flexible lines 14, has an end attached to one interior wall of plenum 12 and spans across the interior space to the opposing wall (page 6, lines 10-14).

5 By contrast, and as discussed above, Cadwell's reinforcing means (30, 32) is placed in direct and full contact with the interior surface of the tube (26, 28) and doesn't span across the tube in order to provide a means for altering the trajectory of a projectile that enters the tube as required by claim 1 of the instant application (claim 1, lines 6-7). And again, Cadwell's reinforcing means is not *dispersed in* the plenum as required by claim 1.

10 Cadwell also fails to anticipate claim 10 of the instant application for the same reasons discussed above: Cadwell does not teach the use of a plurality of flexible members, *dispersed in* the plenum (claim 10, lines 6-7). Also, since Cadwell fails to teach this essential limitation of claims 1 and 10, then he also fails to teach every limitation of dependent claims 2, 8, 9, 13, and 16-18 since they incorporate all the limitations of claims 1  
15 or 10, as indicated.

Furthermore, even if the Examiner is correct in equating Cadwell's reinforcing means 30 and 32 with the ballistic armor fabric sheets, or equivalents, of the instant application, nothing in Cadwell teaches or suggests that the reinforcing means should act as ballistic armor as required by claims 2 and 13. In the Final Office Action, the Examiner  
20 contends that ballistic armor is taught by layers 20d and 22d in Cadwell. Layer 20d is described by Cadwell as a relatively thin layer of sheet metal intended to be resistant to heat

or any flash-fire that may occur as a result of an explosion (column 7, lines 62-66). Layer 22d is described by Cadwell as essentially the same as layer 22 of an alternative embodiment (column 7, lines 58-61). Layer 22 is described as a shielding layer fabricated of a suitable elastomeric or plastic material (column 4, lines 55-66). Nothing in Cadwell describes these layers (20d and 22d), or any other layer or component, as having ballistic properties or even as being a fabric sheet. Since Cadwell fails to teach the use of ballistic armor fabric sheets, the Examiner's rejection of claims 1, 2, 8-10, 13, and 16-18 is improper and should be reversed.

Finally, the Examiner contends that Cadwell teaches the use of a polymeric sealing material in column 5, lines 52-59. Again, as discussed above, this portion of Cadwell only describes reinforcing means 30 and 32. Nothing in this portion, nor in any other portion of Cadwell, teaches or suggests that a polymeric sealing material may be coupled to the interior walls of the "plenum" as required by claims 9 and 16. Cadwell only teaches that the reinforcing means consist of a suitable strong material "to reinforce the tubes and assure that they will not rupture due to a sudden increase in exterior pressure as would occur when a shock wave impinges against the shelter" (column 5, lines 52-59). This requirement only assures the prevention of a rupture to the tubes (or "plenum") 26 and 28 due to a shock wave and does not provide for sealing any punctures or ruptures that occur to the plenum as required by claims 9 and 16. Therefore the Examiner's rejection of claims 9 and 16 as being anticipated by Cadwell is improper and should be reversed.

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**Conclusion**

Upon consideration of the stated bases for the final rejections of claims 1, 2, 8-10, 13, and 16-18, on appeal as pointed out herein, it is clearly established that such final rejections are in error on several accounts, by reason of which a reversal of such final rejections is in order and hereby requested.

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Respectfully submitted,



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(viii) CLAIMS APPENDIX

Claims:

1 1. A trajectory altering and blast energy absorption system,  
2 comprising:

3 a flexible and sealable plenum having opposing walls  
4 that are spaced apart from one another when said plenum is  
5 inflated;

6 a fluid for inflating said plenum; and  
7 means, dispersed in said plenum, for altering trajectory  
8 of a projectile entering said plenum so-inflated with said  
9 fluid.

1 2. A trajectory altering and blast energy absorption system  
2 as in claim 1 wherein said means for altering comprises:

3 a plurality of flexible lines coupled to said walls of  
4 said plenum, said plurality of flexible lines being placed in  
5 tension when said plenum is inflated with said fluid; and

6 a plurality of ballistic armor fabric sheets in said  
7 plenum with said plurality of flexible lines passing  
8 therethrough.

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1       8. A trajectory altering and blast energy absorption system  
2       as in claim 2 wherein each of said plurality of flexible  
3       lines comprises at least one fiber.

1       9. A trajectory altering and blast energy absorption system  
2       as in claim 1 further comprising a polymeric sealing material  
3       coupled to each of said walls of said plenum for sealing  
4       punctures therein.

1       10. A trajectory altering and blast energy absorption system,  
2       comprising:

3             a flexible and sealable plenum having opposing walls  
4       that are spaced apart from one another when said plenum is  
5       inflated;

6             a fluid for inflating said plenum; and

7             a plurality of flexible members dispersed in said plenum  
8       and coupled thereto that are placed in tension when said  
9       plenum is inflated with said fluid.

1       13. A trajectory altering and blast energy absorption system  
2       as in claim 10 wherein said plurality of flexible members  
3       comprises fibers and ballistic armor fabric sheets.



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1        16. A trajectory altering and blast energy absorption system,  
2        as in claim 10 further comprising a polymeric sealing  
3        material coupled to said walls of said plenum for sealing  
4        punctures therein.

1        17. A trajectory altering and blast energy absorption system  
2        as in claim 1 wherein said fluid is air.

1        18. A trajectory altering and blast energy absorption system  
2        as in claim 10 wherein said fluid is air.

(ix) EVIDENCE APPENDIX

none

(x) RELATED PROCEEDINGS APPENDIX

none